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Reply of Cornell University to the Carnegie Foundation for the Advancement of Teaching

MARCH, 1916

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To the Board of Trustees
of the Carnegie Foundation
for the Advancement of Teaching,

GENTLEMEN:

In your resolution of November 17, 1915, you present to Cornell University, as one of the associated institutions, the report of the President of the Foundation upon a comprehensive pension system to be applied in the future. From the letter of the President transmitting the report and from subsequent correspondence it appears that the initial annual cost of the new plan to Cornell University, provided its participation is limited to the pension feature, is estimated at $11,398, that being five per cent of the salaries paid to professors and instructors on our staff who are less than 45 years of age. Even if we assume that the number of teachers and the average salary at Cornell University remain stationary, the cost would rise year by year as these persons advanced in grade and salary to a total estimated at five per cent of the salaries now paid to all professors and instructors, that is, to about $45,000 a year. If teachers and salaries increase, this estimate would need to be raised.

Before considering whether it would be expedient for Cornell University to enter into the proposed arrangement, we have felt bound to scrutinize the financial ability of the Carnegie Foundation to satisfy the just expectations of persons now receiving retiring allowances and of those who would in time receive them under the present rules, the pensionables. Doubtless the expectations in the mind of all who have already received allowances can and will be met. How far the Foundation can and will meet, also, the expectations of every one who has been looking forward with confidence to receiving an allowance in the future, even the distant future, and has allowed that expectation to influence the ordering of his life is a more difficult question the answer to which cannot be assumed. With the help of the information in the annual reports of the Carnegie Foundation that question has been examined and the results are set forth in the appendix.

If the number of teachers does not increase, if salaries do not rise, if the mortality of teachers goes up to the rates indicated by McClintock's table, if the average retiring allowance remains at its present figure, if teachers continue to retire at the age of 67, and if all teachers retain their present connections until death or retirement, the Carnegie Foundation apparently needs $20,000,000 to $23,000,000 in hand to take care of the pensionables, the amount depending on whether it can obtain 4½ or 5 per cent interest on its investments. In the end that sum, both interest and principal, would be exhausted. But if the

retiring age should fall to 65, the initial sum needed would be $25,000,000 to $29,000,000, depending again on the rate of interest.

On the other hand, if the class of pensionables is seriously depleted by emigration to another occupation or to an institution not associated with the Foundation, the sum needed would be correspondingly reduced. Regarding the weight to be attached to this contingency we have found no evidence on which to base an opinion.

In view of the conclusion which Cornell University has been constrained to draw from the evidence, it has answered the question raised by your report, What expectations can and should be met? in the following resolution unanimously adopted on March 8 by the University Faculty at a special meeting called to consider the subject, and unanimously approved on March 11 by the Committee of the Trustees to which the matter had been referred with power.

"The University Faculty believes that the privileges and expectations which have been created under existing rules of the Carnegie Foundation constitute moral claims against its endowment on the part of such teachers and administrative officers now on the staffs of associated institutions as under the present rules would receive retiring allowances and that adequate provision for scrupulously satisfying all these claims should be made before the fund is otherwise drawn upon."

The University has further replied in the following resolution unanimously adopted March 11 at a joint meeting of a Committee of the Board of Trustees to which the subject had been referred with power and of a committee of the University Faculty to which the subject had been referred.

"Whereas it appears that the Foundation is not financially strong enough to carry the burden of the obligations which it has already assumed, therefore, the change in the character of its work and enlargement of its scope which the Report proposes are inadvisable, unless some way can be found either by additional endowment or otherwise to relieve the Foundation of such burden."

The University has further replied in the following resolution unanimously adopted on March 8 by the University Faculty and unanimously approved on March 11 by the Committee of the Trustees.

"The University Faculty is not at present prepared to approved an arrangement with the Carnegie Foundation or a subsidiary corporation whereby the cost of a teacher's insurance and of a retiring annuity or either of them shall be defrayed wholly or in part by withholding a portion of such teacher's salary."

The committees at their joint meeting further considered the request of the Carnegie Foundation for alternative plans or suggestions and in compliance with that request unanimously adopted the following resolutions:

"If relief from the burden of obligations already assumed can be secured, the Foundation should (a) pay out of its income, under rules to be adopted, disability annuities to such teachers in associated institutions as have purchased and are continuing annuity contracts with approved insurance companies maturing at 65 to 68 years of age and of $1,000 to $4,000 in value, such disability annuities to cease when the disability is relieved and in any event when such purchased annuities respectively become payable; and (b) distribute annually to such teachers equally the balance of its income."

"The amounts and terms of these annuities and the questions whether the purchase of them is to be voluntary or required and whether they are to be paid for wholly or in part by the professors and instructors should be determined by each institution."

At a special meeting of the University Faculty held on March 15 the foregoing report was presented and approved.

C. E. CORNELL
M. VANCLEEF
J. DU P. WHITE
E. L. WILLIAMS
R. B. WILLIAMS
J. G. SCHURMAN
Trustee Committee.

I. P. CHURCH
J. E. CREIGHTON
W. A. HAMMOND
C. H. HULL
D. S. KIMBALL
J. MCMAHON
E. MERRITT
W. A. RILEY
W. F. WILLCOX
Faculty Committee.

Ithaca, New York
March 22, 1916.

APPENDIX

The phrase, just expectations, used by the Board of Trustees of the Carnegie Foundation in their resolution of Nov. 17, is understood to mean those expectations which have been aroused by a belief that the existing rules of the Foundation will be applied to all persons now on the staffs of the associated institutions. This implies that changes. disadvantageous to beneficiaries will be applied only to such persons as are added to the staffs of these institutions after a specified future date While this seems to be the proper interpretation of the phrase, the following computation gives a clue also to the amount of the payments which would be required, if all persons under a certain age, such as 45, should lose the privileges conferred by the present rules. No means are at hand for determining the amount that would be required if teachers of any age belonging to a certain grade, like that of instructor, should lose those privileges.

The word, *pensionables*, in this discussion includes every person holding a position in an associated institution, the retention of which to the age of retirement would entitle him or her to claim a retiring allowance or pension.

To cstimate the total amount of the future payments to pensionables and the present sum which should be at interest to meet those payments as they fall due the following information is needed.

1. The number of pensionables.
2. The number of each sex and at each age.
3. The age at which they will retire.
4. The number of each sex who will survive to that age.
5. The expectation of life of each sex at the retiring age.
6. The total number of years of life, male and female, through which the annuities must run.
7. The average retiring allowance for each sex.

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1. *The number of pensionables.* Five years ago the Carnegie Foundation gathered statistics from the 72 institutions which showed that on June 30, 1911, their staffs included 5,025 teachers in active service who might ultimately claim pensions under the rules.[1] The

[1] Seventh Report, page 93.

present number is probably much greater. In default of recent information the following method of estimate will give an approximation. The *World Almanac* gives the number of instructors or members of the teaching staff in 65 of these 72 associated institutions as 8,979 in 1910 and 11,685 in 1915, an increase of 30.1 per cent in the five year period. Probably the pensionables in the 72 institutions increased between 1911 and 1916 at about this rate. On that hypothesis there are now about 6,540 pensionables in the 72 institutions. But Rensselaer Polytechnic Institute, which has recently been added to the roll of associated institutions, has 63 instructors, of whom perhaps 33 are pensionable. This indicates a total of 6,573 pensionables in the 73 associated institutions.

2. *The number of each sex and at each age.* Two returns for different dates[1] show that 9.8 per cent of the pensionables are women, and it is therefore probable that about 5,929 of the pensionables are men and 644 women.

The age distribution of the men was ascertained in 1911[2] and probably has not materially changed. Assuming it to be the same, these 5,929 men are distributed as follows:

Age Period	Distribution in 1911 Number	Per Cent	Probable Distribution in 1916
20–64	4,453	100.0	5,929
20–24	86	1.9	111
25–29	575	12.9	752
30–34	894	20.1	1,171
35–39	904	20.3	1,182
40–44	715	16.1	939
45–49	550	12.4	723
50–54	359	8.1	472
55–59	211	4.7	274
60–64	159	3.5	204
65+	(78)		101

3. *The age at which the pensionables will retire.* They cannot retire below the age of 65 and many have retired at a higher age. The annual reports of the Carnegie Foundation give two series of figures throwing light on the probable retiring age in future years, namely, the average age at retirement of all professors and officers in associated institutions (1) who had retired on the basis of age and were in receipt of allowances on September 30, of successive years; and (2) who had thus retired during the calendar year preceding. The following table brings these figures together.

[1]Seventh Report, page 93, and Ninth Report, page 6.

[2]Seventh Report, page 93.

Year	Pensioners in associated institutions retiring on basis of age and receiving pensions on Sept. 30 of year specified had an average age of	Pensioners in associated institutions retiring on basis of age during preceding calendar year had an average age of
1906	71.0	----
1907	----	69.2
1908	70.0	69.0
1909	69.7	69.1
1910	69.6	69.9
1911	69.5	67.9
1912	69.3	68.2
1913	69.0	67.6
1914	68.8	65.7
1915	68.7	66.9

The foregoing figures show that the average age at retirement is falling. For the last three years it has been below 68 and for the last two years below 67. It seems clear that during the next generation the average age of retirement will lie between 65 and 67 years. But it cannot now be more closely determined. Under these conditions the best procedure is to carry through the computation with each of these ages as limits.

4. *The number of each sex who will survive to the retiring age.* At this point some life table must be accepted as a guide. The report shows (p. 24) that the McClintock table for annuitants yields results which come nearer than those of the others to agreeing with the experience of the Foundation, but that the longevity of the Foundation's pensioners is decidedly above that of the annuitants. In view of the general evidence that teachers as a class are long-lived, this table should probably be regarded as showing a minimum expectation of life. If so, the results from using it will understate the future outlay and the present sum that will be needed.

It is now possible to estimate how many of the 5,929 men will survive to ages 65 and 67. The results appear below.

Age period	Present number	Per cent who will survive to age 65	Per cent who will survive to age 67	Number who will survive to age 65	Number who will survive to age 67
20-24	111	52.4	48.2	58	53
25-29	752	54.5	50.2	410	378
30-34	1,171	56.9	52.4	666	613
35-39	1,182	59.6	54.9	704	648
40-44	939	62.8	57.8	590	543
45-49	723	66.7	61.4	482	444
50-54	472	71.8	66.2	339	312
55-59	274	77.4	72.9	212	200
60-64	204	90.2	83.0	184	169
65+	101	100.0	100.0	101	101
All ages	5,929			3,746	3,461

These figures indicate that 63.2 per cent will survive to age 65 and 58.4 per cent to age 67. The 644 women probably average somewhat younger than the men but at equal ages women have a greater expectation of life. Assuming that these two differences counterbalance and that the proportions of women surviving to the ages of 65 and 67 are the same as above, 407 of the women will reach age 65 and 376 age 67.

5. *The expectation of life of each sex at the retiring age.* The average expectation of life of the 3,746 men who will reach 65 is 11.76 years; that of the 3,461 who will reach 67 is 10.69 years. McClintock's table applies only to male lives but other tables for the sexes separately show that at ages 65 and 67 a woman's expectation of life exceeds a man's by from 8 to 11 per cent. To allow for this difference, the male expectation of life has been increased ten per cent., giving to the women at age 65 an expectation of life of 12.94 years and at age 67 of 11.76 years.

6. *The total number of years of life, through which the annuities must run.* The total years of life for which pensions would need to be paid would then be:

At age 65—Males	3746 × 11.76 =	44,053
Females	407 × 12.94 =	5,256
At age 67—Males	3461 × 10.69 =	36,998
Females	376 × 11.76 =	4,422

7. *The average retiring allowance for each sex.* In estimating the average pension the following figures will be serviceable.

AVERAGE AMOUNT OF ALLOWANCE ON BASIS OF AGE TO PROFESSORS AND OFFICERS IN ASSOCIATED INSTITUTIONS

	Allowances in force Sept. 30 of year specified		Allowances granted during preceding calendar year	
Year	Number	Average amount.	Number	Average amount.
1908	60	$1492	18	$1567
1909	88	1534	29	1650
1910	114	1688	26	2166
1911	132	1735	21	1929
1912	154	1788	29	2006
1913	166	1806	22	1981
1914	181	1856	25	2075
1915	187	1900	21	2196

These figures show that in seven years the average amount of all the retiring allowances in force at a given date has increased 28 per cent and of the new allowances granted during a year has increased 40 per cent. In view of the increased cost of living and the concurrent upward trend of salaries, this change is likely to continue. The average retiring allowance granted during the five years, 1911–15, exceeded $2,000 and that figure seems none too high. This sum is the average for both sexes, and earlier returns[1] show that the retiring

[1] Seventh Report, page 93.

allowance for a man exceeds by one twentieth and that for a woman falls short by one third of the general average. Accordingly the retiring allowance for a man may be set at $2,100 and for a woman at $1,300.

The amount of the allowances to be paid these pensionables under present rules, provided each retires at the age of 65, can now be computed.

$$\begin{aligned} \$2,100 \times 44,053 &= \$92,511,300 \\ 1,300 \times 5,256 &= 6,832,800 \\ \hline &\quad \$99,344,100 \end{aligned}$$

The amount to be paid provided each retires at the age of 67 would be :

$$\begin{aligned} \$2,100 \times 36,998 &= \$77,695,800 \\ 1,300 \times 4,422 &= 5,748,600 \\ \hline &\quad \$83,444,400 \end{aligned}$$

This computation shows that, if all pensionables now on the staffs of associated institutions are given the benefits which the present rules have led them to expect and if the group is reduced only by death and not at all by emigration, the pensions to which they will ultimately become entitled will amount to between eighty and one hundred million dollars depending mainly upon whether the retiring age is 67 or 65.

It is probably more important to know how much money now in hand would be required to supply these payments as they become due. This can readily be ascertained by discounting the value at age 65 or 67 of the annuities beginning at that age discounted for the time elapsing before the first payment is due. As most of the endowment of the Carnegie Foundation now draws interest at 5 per cent but seems likely to earn a lower rate in future, the payments have been discounted at 5 and 4½ per cent. The results are as follows :

Rate of interest for discounting	Discounted present value of these annuities for age	
	65	67
5	$25,600,000	$20,300,000
4½	28,800,000	23,000,000

The sums mentioned above would be used up, principal and interest, in making the future payments indicated as necessary.

Regarding the degree to which these sums would be reduced by proper allowance for emigration no basis for an estimate is at hand. The decrease would probably be a large one and it may be appropriate to suggest that, if the Carnegie Foundation should repeat for June, 1916, the inquiry it made for June, 1911, it would be able by comparing the two results to throw light on that important element of its problem.

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